

Local Knowledge and Innovation Dynamics: A Comparative Perspective Between the European Union and the United States



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Approach to Plan Smart Specialisation Strategies for Local Economic Development

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# MAPS-LED PROJECT



FUNDING: HORIZON 2020 MSCA

LIFESPAN: 2015-2019

PARTNERS: 6 UNIVERSITIES (4 EU/ 2 US)

GOAL: IDENTIFY AND PRESCRIBE THE

**IMPLEMENTATION OF S3 IN TERMS OF SPATIAL**,

SOCIAL AND ENVIRONMENTAL FACTORS

DRIVERS:

**CLUSTER POLICIES, TERRITORIAL MILIEU** 

# Where The contexts of innovation



### **EU FUNDING**



# € 213,8 Billion 2014-2020

Total EU investment according to different scheme of funding, including Financial Instrument

#### **Innovation policy**

Horizon 2020 and SMEs

EUR 80 billion of EU funding available over 7 years (2014 to 2020)

#### Access to finance

Micro, Small, SME, Midcap

Research, development, innovation Start-up, early stage

**European Structural and Investment Funds** 

EUR 110 billion to innovation activities, ICT, **RIS3** SME competitiveness and the low carbon

economy.

64 €9,3bil projects

**European Fund for** 

Strategic Investments

185 145800 Agreement SME STARTUP €3,5bil

> €100bil **Total Expected** Investment triggered



### Cross-Sectoral Clusters

European Cluster Observatory



### US Innovation Strategy White House



### **\$589 Billion** From 2015

GRANT COMPETITIONS The **Regional Innovation Strategies (RIS) Program,** a catalytic national grant program focused on regional capacity-building.

*i6 Challenge - Funding to build regional capacity to translate ideas and inventions into products, services, companies, and jobs.* 

Seed Fund Support - Funding to support availability of and access to regional risk capital for early-stage companies.

#### Six points

Investing in the Building Blocks of Innovation

Research Education infrastructure investment Digital Infrastructure

**Creating Quality Jobs** 

and Lasting Economic

Growth

Fueling the Engine of Private-Sector Innovation

Private-sector investments in R&D (tax credit) Innovative Entrepreneurs (startup) R&D commercialization: Incubators Empowering Innovators with Open Federal Data **Regional Innovation Ecosystems (cluster initiatives)** 

### Empowering a Nation of Innovators

Creativity Crowdsourcing Design Strategies to Co-Create With the Public

Catalyzing Breakthroughs for National Priorities

Tackling Grand Challenges (world) Targeting Disease with Precision Medicine Neurotechnologies Innovations in Health Care Smart Cities (services) Delivering Innovative Government with and for the People

Toolkit for Public-Sector Problem-Solving Innovation Labs Digital Service Delivery Social Innovation



EMPLOYME	INT	36%					64%
INCO	ME	50%					50%
PATEN	TS	96.5%					3.5%
		Traded vs. Local SI	hare of the U.S. Economy			2(	)15
EMPLOYMENT	36%			64%	0044		
INCOME	51%			49%	2011		
PATENTS	91%			9%			
	Traded Industries		Local Industries		US CLUSTER		

- 'Spiky' across space; 2/3s of all traded industry employment is concentrated in strong clusters
- Serve national and global markets
- Exposed to competition from other regions and nations
- Critical for prosperity through higher wages, productivity, and innovation; growth potential set by the global market

- Present everywhere, proportional to overall size
- Serve exclusively the local market
- Little exposure to crossregional competition
- Important for jobs but have lower wages; growth potential limited by size of the local market

US CLUSTER MAPPING 51 Traded Cluster 16 Local cluster

#### Delgrado, 2015

# The innovation policies in EU-US contexts





### Comparing US and EU in innovation policy



#### Innovation policy framework US vs. EU-

#### **Regional innovation clusters**



**geographic concentrations of interconnected businesses, suppliers, service providers, coordinating intermediaries, and associated institutions like universities or community colleges in a particular field** By facilitating such dynamics as labor market pooling, supplier specialization, and knowledge spillovers, industry clusters benefit all sorts of firms and regions by enhancing the local and innovation potential, encouraging entrepreneurship, for job creation.



#### Competitiveness

is the result of both top-down and bottom-up processes in which many companies and institutions take responsibility

Economic development is a collaborative process involving government at multiple levels, companies, teaching and research institutions, and private sector organizations

#### **Cluster Initiatives**



#### are formally organized efforts to promote cluster growth and competitiveness through collaborative activities among cluster participants.

cluster initiatives and cluster initiative programs supporting multiple initiatives are run by governments. Cluster initiatives may sponsor education and training activities, encourage relationship building, or facilitate market development through joint market assessment and marketing,



#### Why Innovation policy

What is the distinctive competitive position of the geography given its location, legacy, existing strengths, and potential strengths?

- What unique value as a business location?
- For what types of activities and clusters?

What elements of the business environment can be unique strengths relative to peers/neighbors? What existing and emerging clusters represent local strengths?.

#### Innovation policy framework US vs. EU-

#### "Research and Innovation Strategies for Smart Specialisation"

Smart specialisation strategies are about enabling regions to turn their needs, strengths and competitive advantages into marketable goods and services.

#### Place-based

Focus on R&D and Innovation Cross-sectorial connection Key role of entrepreneurial actors Critical mass and scale of activity

# 3

#### Structural change

#### is the result of Modernisation and diversification through research and innovation

Economic development is a discovery process to structure and integrate the entrepreneurial knowledge which is dispersed and fragmented towards the desirable area of change.

#### RIS3



are regional Plan to improve design and implementation of future innovation, research and related strategies, and the subsequent development of smart policy mix at multiple governance levels.

Step 1: Analyse the regional context and potential for innovation; Step 2: Ensure participation and ownership; Step 3: Elaborate an overall vision for the future of the region;Step 4: Identify priorities; Step 5: Define a coherent policy mix and action plan; Step 6: Integrate monitoring and evaluation mechanisms.



#### Why Innovation policy

How to promote efficient, effective and synergetic use of public investments and supports countries and regions in strengthening their innovation capacity, while focusing scarce human and financial resources in a few globally competitive areas in order to boost economic growth and prosperity?

### Comparing US and EU in innovation policy



provides a conceptual framework to describe and analyze important

aspects of modern economy

- potential elements of a regional innovation eco-system
- the cluster approach facilitates analysis of innovation needs to improve innovation policy and can serve as a useful framework for coordinating policies.

Place-based approach Innovation ecosystem

#### Entrepreneurial discovery

allows to generate new specialties through the

discovery of new domains of opportunity and the local

concentration and agglomeration of resources and

competences in these domains'.

Research Innovation Smart Specialization Strategies RIS3.

EU

US

Regional Innovation Strategies Program (RIS).

### The MAPS-LED vision: RESEARCH QUESTIONS

What emerged by the combination of clusterbased analysis with place-based approach:

The emerging Role of CITY in shaping innovation ecosystem



The shift from success factors of cluster (that are naturally included when a cluster is identified) to the business atmosphere (as defined by Schumpeter), which is due for the presence of cluster (the innovation concentration) or affects the innovation when is concentred, led to define two related research questions:

1 what happens when innovation is concentred and why it happens

**2** To booster research and innovation, as precondition of S3 implementation, what are the factors that can affect innovation process in a particular context.

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### The MAPS-LED vision: NEED FOR APPLIED METHODOLOGY

the geographic concentration of cluster is characterized by a *multiscalar* and *multivariable* geography:

in each territorial dimension (from *state* level to *city* level), the cluster provides a conceptual framework to describe and analyze important aspects of modern economies of that territorial dimension.

Its role is not to define a specific area, but to characterize the specific geographic area in terms of innovation, specialization and capacity to activate competitive and comparative advantages.

According to the applied spatialisation methodology, the cluster even with a physical configuration acquires the connotation of

innovation concentration explanatory

Based on a multidisciplinary approach in combining urbanregional science with research-innovation dynamics, a novel methodology has been delivered to spatialize clusters in **Boston and San** Diego, as expression of how innovation is experimented in the modern economy and how the place works.

How cluster performance factors can be combined with the context characteristics by highlighting the spatial implications of knowledge dynamics?

### CLUSTER SPAZIALIZATION METHODOLOGY

The methodology's rationale is based on the explanation that a specific land use code can be combined to a set of economic activities classified within NAICS codes, and subsequently to sub-clusters and then to clusters.



Source: MAPS-LED project elaboration

The link between Clusters and Spatial Planning

The spatialisation at urban level through the association between NAICS and Land Use using the parcels as reference unit allows at detailing the specific localisation of clusters at urban level.

This association yielded our research team to produce maps of Cluster spatialization in the cities of Boston, Cambridge, and San Diego.



### The MAPS-LED vision

Cluster spatialization at city level and innovation spaces



### The MAPS-LED vision

Demand for innovation and city transformation



### The MAPS-LED vision: FOCUS ON CLUSTER INITIATIVES

The perception of space/place **MEMBERS** 

![](_page_21_Figure_2.jpeg)

# The MAPS-LED vision: FOCUS ON CLUSTER INITIATIVES

The perception of space/place **VISITORS** 

![](_page_22_Figure_2.jpeg)

### The MAPS-LED vision

How to Measure EDP

	Output Indicators
<b>1</b> Place	<ul> <li>square meters of sites for innovation</li> <li>New urban facilities</li> <li>Innovative public service (i.e. outsourcing, wireless broadband availability and coverage)</li> <li>Mixed used and mixed income (housing, public service (land capture) business, education,</li> </ul>
Knowldeg	<ul> <li>Number of networking activities (events) based on multi-domain initiatives</li> <li>Number of visitors/participants to the events</li> <li>Availability of analysis with: big data, open data, data analytics</li> <li>Availability of research facilities</li> </ul>
3 Innovation	<ul> <li>Number of start-ups</li> <li>Variety of business sectors (memberships and visitors)</li> <li>life-cycle oriented Measures in Credit access (joining financial products risk, loan and guarantee)</li> <li>Number of initiatives to avoid credit</li> </ul>

concentration

#### **Result Indicators**

Joint venture (JV) arrangements, Venture capital involved on total investment Start up-survival rates after 3 and 5 years , Multi-domain initiatives Public-private partnership budget The vision of MAPS-LED for Smart Specialisation Strategies implementation

#### 2015 -

The key elements that distinguish the smart specialisation approach from earlier, more traditional approaches to regional development or industrial policies are that in its design it is based on a so-called "entrepreneurial discovery process" of possible opportunities for developing new comparative advantages

# The vision of MAPS-LED for Smart Specialisation Strategies implementation

#### 2018 - MAPS-LED

EDP is the medium to design tailored policy by acting on the relation among **Knowledge Innovation Place.** 

EDP shall be managed at local level and included in the urban development agenda to reinforce the connections urban-rural.

EDP is activated by **urban regeneration mechanisms** and simultaneously expands innovation towards urban regeneration initiatives in deprived areas.

The mechanism of urban regeneration allows setting public-private partnerships to **filter the innovation**. And allows to support the innovative financial instruments because:

Local audit, network effect management, advising the cycle of start up and cluster (need of different financial products – from equity to loans in each stage of their cycle – local credit access.)

# CONCLUSIONS

#### The structural transformation

literature focuses on the nature of the national economy and the policies set at this level. Location-specific interventions like special economic zones and industrial parks are being discussed but remain a tool of national policymakers.

The competitiveness literature focuses instead on the complementary roles of different levels of government and emphasizes the role of subnational regions in both analysis and action (Ketels, 2017).

![](_page_26_Picture_4.jpeg)

![](_page_26_Picture_5.jpeg)

The **competitiveness** literature

argues for a focus on upgrading competitiveness fundamentals in a highly context-specific way, using all existing clusters of related industries as platforms to inform and mobilize action to upgrade competitiveness.

The structural transformation literature suggests pushing the development of specific industries perceived to have more development potential, using industry-specific interventions. Seville 27 Sep 2018

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#### THANK YOU